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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,696

11/12/2003

Herve Varin

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8604

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7590

06/26/2007

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EXAMINER

CHARLES, MARCUS

ART UNIT

PAPER NUMBER

3682

MAIL DATE

DELIVERY MODE

06/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/706,696

Applicant(s)

VARIN ET AL.

Examiner

Marcus Charles

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to the interview held 4/11/2007, which has been entered.

Claims 1- 17 are currently pending.

Response to Submission

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al. (4,981,462). in view of Kitahama et al. (4,904,232). In claims 1-3, 5 and 15, White et al. discloses a transmission belt (figs. 3 and 4) comprising a plurality of v-ribs (38) made from a single material having flat sides faces (44) and round ridges that present a convex curvilinear profile. White et al. also discloses the tip of the rib has a radius of curvature but fails to disclose the actual range of the radius. Kitahama et al. discloses a belt having ribs (16) with tips (23) having a radius of curvature in the range of approximately 0.5 mm to 1.1 mm (col.3, lines 43-47) and the height of the rib is 2.5mm and the height of the inner portion, which is the vertical height of the curve section of the rib is approximately 0.8mm, which indicate that there vertical height of the flat surface of the rib is approximately 1.7 mm. However,

since the included angle is approximately 20-80 degrees, the outside angle is approximately 50-60 degrees. Therefore, the height of the flat side is about $1.7/\sin(90-1/2\theta)$. One possible value is when θ is 80 degrees, the height is approximately 1.73 mm which is within the range of the claimed invention. Kitahama et al. disclose that the values are important in increasing the lifetime ratio of the belt (col. 5, lines 23-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of White et al. so that the rib tip has a convex curvilinear radius, the height of the rib and the length of the flat side that fall within the ranges as disclosed by Kitahama et al. in order to increase the lifetime ratio of the belt.

Furthermore, it would have been a matter of obvious design choice based on the size of the belt and pulley such that one of ordinary skill in the would be able to make the radius of the convex curvilinear profile to be greater than 1.1 mm and less that or equal to 1.5 mm, the length of the flat side to be between 0.7mm and 1.7 mm and the height of the rib to be between 1.8 and 2.2 mm. In addition, Kitahama et al. do not disclose the ranges as set forth in claims 6-10 and 16-17. It is well known in the art that the radius of the tip of the rib and the length of the flat side of the rib is dependent on the size of the belt and the belt and pulley. Therefore, such dimensions are subjective and relative.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of White et al. so that the rib tip has a convex curvilinear radius, the height of the rib and the length of the flat side that fall within the ranges of the claimed invention, since it has been held that where the general conditions of a claim are disclose in the prior art, discovering the optimum ranges involves routing skill

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ion the art. *In re Aller*, 105 USPQ 233. Furthermore, it would have been a matter of obvious design choice based on the size of the belt and pulley such that one of ordinary skill in the would be able to make the radius of the convex curvilinear profile to be greater than 1.1 mm and less that or equal to 1.5 mm, the length of the flat side to be between 0.7mm and 1.7 mm and the height of the rib to be between 1.8 and 2.2 mm.

In claim 4, note the curvilinear profile is a circle (fig. 2).

In claim 11, note the curvilinear profile is tangential to the side face at the point of contact (22, 125 in fig. 2).

In claim 12, it is apparent that the belt could be K-type belt.


4. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al. in view Kitahama et al. of as applied to claim 1, above, and further in view of Waugh (4,011,766). White et al. do not disclose that the V-ribs of the V-belt are machined or molded. Waugh discloses that it is well know for the V-ribs of the V-belt to be machined or molded (col.6, 22-33). Therefore, it would have been obvious to one of ordinary skill in art at the time of the invention to produce the v-ribs of White et al. device by molding or machine in view of Waugh in order to manufacturing cost, reduce production time and to avoid shaving/finishing after manufacturing.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Marcus Charles
Primary Examiner
Art Unit 3682
June 12, 2007